

CLAIMS

I claim:

1. An isolated protein comprising a sequence of amino acid residues as shown in SEQ ID NO:3, wherein said sequence is at least 80% identical to residues 6 through 56 of SEQ ID NO:2.

2. The isolated protein of claim 1 wherein said protein is from 51 to 81 amino acid residues in length.

3. The isolated protein of claim 1 wherein said sequence is at least 90% identical to residues 6 through 56 of SEQ ID NO:2.

4. The isolated protein of claim 1 wherein said sequence consists of residues 6 through 56 of SEQ ID NO:2.

5. The isolated protein of claim 4 wherein said protein is from 51 to 59 residues in length.

6. The isolated protein of claim 1 wherein said protein is from 51 to 59 residues in length.

7. The isolated protein of claim 1 further comprising an affinity tag.

8. The isolated protein of claim 7 wherein said affinity tag is maltose binding protein, polyhistidine, or Glu-Tyr-Met-Pro-Met-Glu (SEQ ID NO:6).

9. An expression vector comprising the following operably linked elements:

(a) a transcription promoter;

(b) a DNA segment encoding a protein of from 51 to 81 amino acid residues comprising a sequence of amino acid residues as shown in SEQ ID NO:3, wherein said sequence of

amino acid residues is at least 80% identical to residues 6 through 56 of SEQ ID NO:2; and

(c) a transcription terminator.

10. The expression vector of claim 9 further comprising a secretory signal sequence operably linked to the DNA segment.

11. The expression vector of claim 9 wherein said sequence of amino acid residues is at least 90% identical to residues 6 through 56 of SEQ ID NO:2.

12. The expression vector of claim 9 wherein said sequence of amino acid residues consists of residues 6 through 56 of SEQ ID NO:2.

13. The expression vector of claim 12 wherein said protein is from 51 to 59 residues in length.

14. The expression vector of claim 9 wherein said protein is from 51 to 59 residues in length.

15. The expression vector of claim 10 wherein said vector further comprises a second DNA segment encoding an affinity tag operably linked to the DNA segment encoding the protein.

16. The expression vector of claim 15 wherein said affinity tag is maltose binding protein, polyhistidine, or Glu-Tyr-Met-Pro-Met-Glu (SEQ ID NO:6).

17. A cultured cell containing an expression vector according to claim 9, wherein said cell expresses the DNA segment.

18. A method of making a protein comprising:

culturing a cell according to claim 17 under conditions whereby said DNA segment is expressed; and recovering the protein encoded by the DNA segment.

19. An antibody that specifically binds to a protein of from 51 to 81 amino acid residues comprising a sequence of amino acid residues as shown in SEQ ID NO:3, wherein said sequence is at least 80% identical to residues 6 through 56 of SEQ ID NO:2.